

DMSMS Workshop

Commodity Management in the Department of Defense Microelectronics Commodity

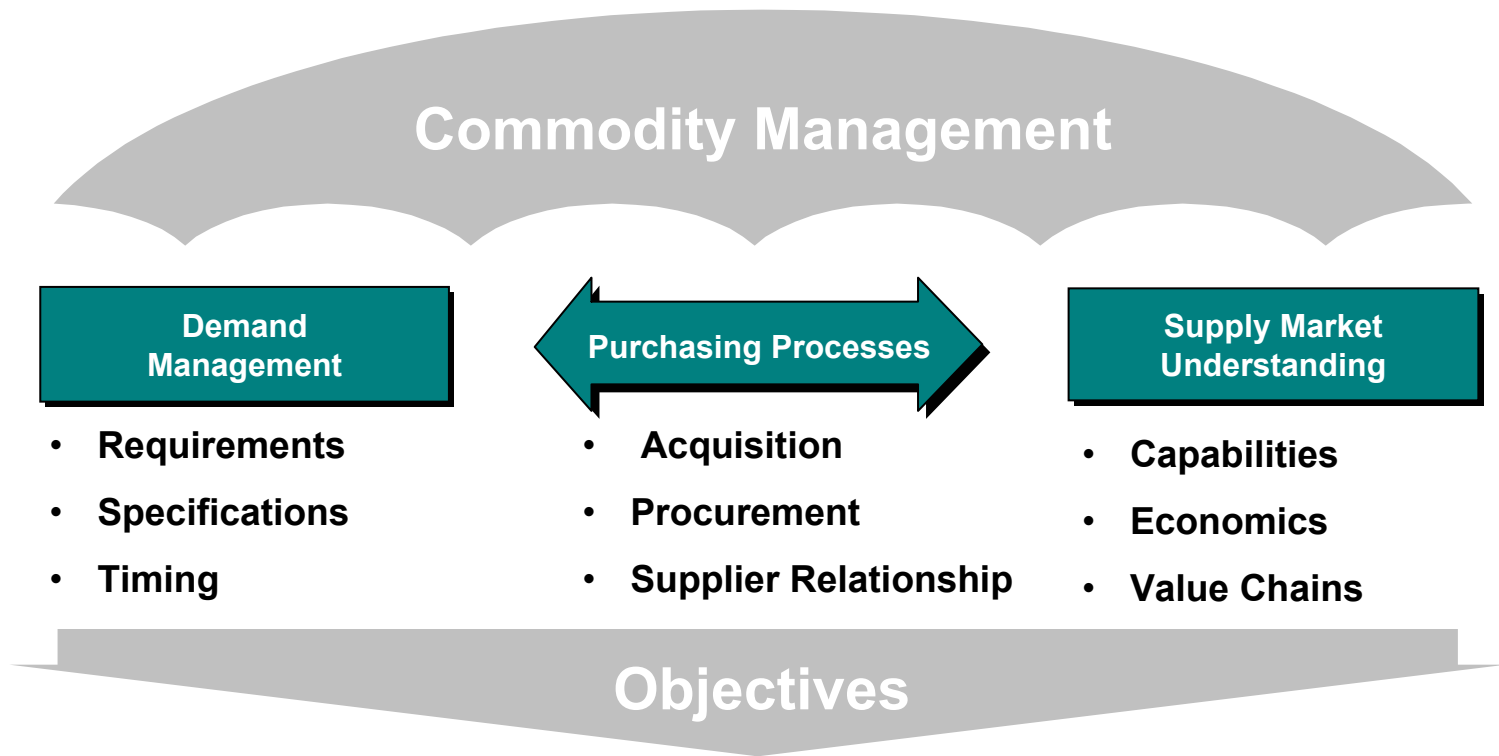
San Antonio, TX
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Commodity Management is a recognized industry best practice



- Optimize Total Cost of Ownership**
- Supply Assurance and Strengthened Supply Base**
- Innovation Incorporated in Weapons Systems and Processes**

DoD and industry have different philosophies on the use and management of microelectronics

DoD profile

- ▶ DoD spend is 0.4% of Global semiconductor market
- ▶ “Repair and Maintain strategy”
- ▶ DoD life cycles are long and shift to COTS parts has led vendors away from the DoD market
- ▶ DoD has limited influence in global market, but potential for greater influence in North American PCB market
- ▶ DoD organizations/initiatives such as DMEA, Trusted foundry program, DMSMS addressing supply/obsolescence issues
- ▶ Individual weapons system programs are responsible for their individual items

Industry trends

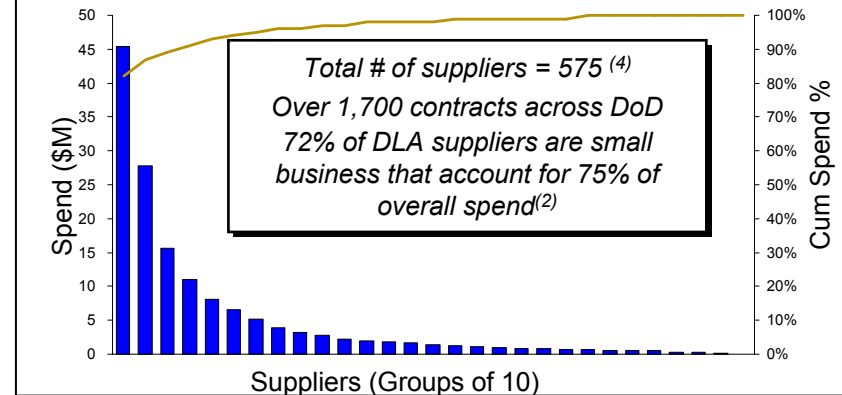
- ▶ Retail consumer driven - top global suppliers focus on automotive, wireless, consumer electronics markets
- ▶ “Throw away strategy”
- ▶ Focus on generating economies of scale
 - high volumes
 - lower cost products
 - shorter life cycles
- ▶ Fabrication capacity migrating to Southeast Asia; North American PCB capacity is down 50% over last 5 years
- ▶ Market and technological factors have led to vertical specialization

DoD microelectronics commodity characteristics

DEMAND CHARACTERISTICS

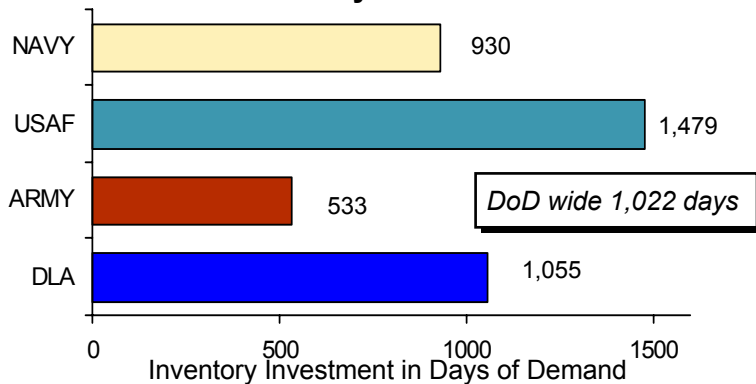
Total usage ⁽¹⁾	\$1,094M	
Total spend ⁽²⁾	\$728M	
Total inventory ⁽³⁾	\$3,062M	
	<u>Microchips</u>	<u>Circuit boards</u>
	(Consumables, FSC 5962)	(Repairable, FSC 5989)
# of NSN's	74,000	169,000
Unit costs	Low cost (85% < \$1000)	High cost (80% > \$1000)

SUPPLY CHARACTERISTICS



INVENTORY INVESTMENT CHARACTERISTICS

Microelectronics Days of Demand on Hand



PERFORMANCE CHARACTERISTICS⁽⁵⁾

	<u>Microchips</u> (Consumables, FSC 5962)	<u>Circuit boards</u> (Repairable, FSC 5989)
Supply Availability	88%	77%
Overall Supply Availability = 85%		
Admin Lead-time (avg. days)	61	85
Production Lead-time (avg. days)	135	214

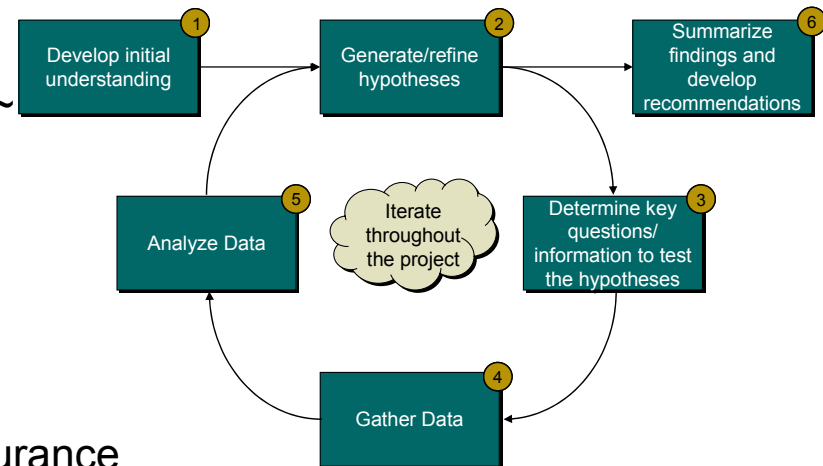
(1) CY 2004 demand, (2) CY 2004 contract spend, (3) Inventory is a snapshot as of July 2005 ; Spend lags demand (4) FY 2003 DoD Contract data from Eagle Eye Publishers; (5) CY 2004 DLA data

Initial insights reveal fragmented DoD procurement and short falls in material availability

- ▶ In 2003, 60% of microelectronics spend was with 4 traditional DoD suppliers (Lockheed Martin, Northrop Grumman, Raytheon, General Dynamics)
- ▶ Bottom 24% of spend was across 565 suppliers
- ▶ A large number of small business suppliers are available for this commodity
 - 72% of DLA vendors are small businesses
- ▶ DoD's leverage is dispersed across a large number of contracts
 - Lockheed Martin was the top supplier in 2003 with 57 contacts for \$185M spend across DLA and each of the Services
 - Northrop Grumman has 93 contracts for \$63M
 - Raytheon had 134 contracts for \$58M
- ▶ DoD supply performance is not in line with DoD-wide inventory investment
 - 2.8 years of demand on hand (1,022 days) achieved supply availability of 85%
- ▶ Supply performance varies even within the top suppliers with only one of DLA's top 15 suppliers in each microelectronics category meeting the 85% availability target

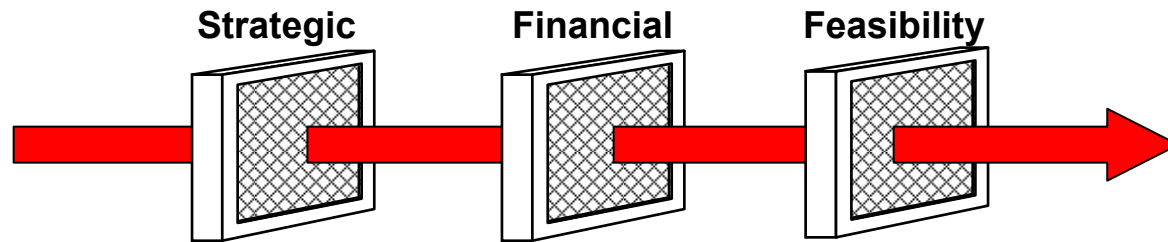
Chartered a commodity management initiative to present a DoD-wide view of the Microelectronics commodity

- ▶ Commodity team with Representation from OSD, each of Services and Agencies
- ▶ Short timeframe (5 months) operating in Virtual team structure
 - Teams collaborated via weekly conference calls, 2 on-site meetings
 - Minimal time demand on participants ~ few hours per week
- ▶ Project employed Hypothesis driven approach
 - No significant investment in data collection ~ teams leveraged existing data / reports
 - Structured, iterative process
- ▶ Clear objectives
 - Optimized Total Cost of Ownership
 - Strengthened Supply Base and Supply Assurance
 - Innovation in Weapons Systems and Processes



Continuing team effort is devoted to defining opportunities and developing strategies for DoD-wide implementation

- ▶ Defining a wide range of potential opportunities
- ▶ Evaluate and filter opportunities



- ▶ Prioritize opportunities based on their magnitude
- ▶ Develop actionable strategies for DoD-wide implementation
- ▶ Expected outcomes
 - Improved availability for the warfighter
 - Reduced administrative costs
 - Material cost savings
 - Release working capital funds for more appropriate use

Opportunities

- ▶ Streamline Contracting Process
 - Centralized contracting with decentralized ordering
 - Greater use of long term contracts
 - Leverage existing and new strategic relationships
- ▶ Eliminate duplicate NSNs
 - Review and revise NSN cataloging process
 - Consolidate duplicate NSNs
- ▶ Obsolescence Mitigation
 - Implement PBL in weapons systems contracts
 - Develop tools /methodology to demonstrate/educate PMs value of tech refresh and obsolescence mitigation
- ▶ Improve collaboration/partnering with industry
 - Establish a consolidated supply and demand planning process
 - Align DoD requirements and industry capabilities/plans